

CLAIMS:

1. A hand-held powered hammer comprising:
 - a hammer housing;
 - a hammering mechanism;
 - a spindle rotatably mounted within the housing; the spindle having at least two selectable modes of operation including a first mode in which the spindle is rotatable within the housing and a second mode in which the spindle is restrained from rotation;
 - a first set of teeth rotatable with the spindle and selectably movable between a first position, corresponding to the first mode of operation of the spindle, and a second position, corresponding to the second mode of operation of the spindle;
 - a spindle lock arrangement mounted within the housing and comprising a spindle lock tooth engageable with the first set of teeth when the first set of teeth are in the second position, and
 - a resilient synchronising element positioned to engage the first set of teeth before the first set of teeth reaches the second position, so as to align the first set of teeth for engagement with the spindle lock tooth when the first set of teeth are in the second position.
2. A hammer according to claim 1 wherein the set of teeth are chamfered so that they taper to a reduced width.
3. A hammer according to claim 2 wherein the set of teeth are chamfered so that adjacent teeth include facing surfaces which slope away from each other.
4. A hammer according to claim 1 wherein the synchronising element is positioned in axial alignment with the spindle lock tooth.

5. A hammer according to claim 1 wherein the spindle lock tooth is a first spindle lock tooth and the spindle lock arrangement includes a second spindle lock tooth and a gap located between the first spindle lock tooth and the second spindle lock tooth, and wherein the synchronising element is positioned in axial alignment with the gap.
6. A hammer according to claim 1 wherein the first set of teeth are formed on a gear and the gear is mounted around the spindle.
7. A hammer according to claim 1 and further comprising a gear train mounted in the housing and engaged with the first set of teeth when the first set of teeth are in the first position.
8. A hammer according to claim 6 and further comprising an overload clutch arrangement drivably connectable between the first set of teeth and the spindle.
9. A hammer according to claim 1 wherein the first set of teeth is axially slideably moveable into engagement with the spindle lock tooth.
10. A hammer according to claim 1 wherein the synchronising element includes an engaging element slideably mounted on the spindle lock arrangement and a spring element for biasing the engaging element into an engaged position in which engaged position the engaging element is engageable with the set of teeth.
11. A hammer according to claim 10 wherein the spindle lock arrangement defines a recess with an opening, the spring and the engaging element are located within the recess and the spring biases the engaging element into a position in which the engaging element protrudes from the entrance to the recess.
12. A hammer according to claim 10 wherein the engaging element is a ball.
13. A hammer according to claim 1 wherein the synchronising element is a resilient arm engageable with and laterally deflectable by the first set of teeth.
14. A hammer according to claim 10 and further including a shaft and wherein the spindle lock arrangement is located at the forward end of the shaft and the spindle lock

arrangement includes a biasing assembly that biases the intermediate shaft rearwardly within the housing.

15. A hammer according to claim 14 wherein the biasing assembly for the intermediate shaft includes a resilient element positioned to engage the forward end of the intermediate shaft.

16. A hammer according to claim 16 wherein the resilient element acts to bias the intermediate shaft in a direction substantially perpendicular to the direction in which the engaging element acts to engage the first set of teeth.